FUTURE FISHERIES IMPROVEMENT PROGRAM
GRANT APPLICATION
(please fill in the highlighted areas)

I. APPLICANT INFORMATION

A. Applicant Name: WestSlope Chapter, Trout Unlimited

B. Mailing Address: 111 N. Higgins, Suite 500

C. City: Missoula State: MT Zip: 59802

Telephone: (406)546-3005 E-mail: westslopechapter.tu@gmail.com

D. Contact Person: Molly Barth

Address if different from Applicant:

City: State: Zip:

Telephone: 415-235-7148 E-mail: mbarth@tu.org

E. Landowner and/or Lessee Name (if other than Applicant): Jeff Crouch and Jennifer Boyer / Missoula County (attn.: Lisa Moisey)

Mailing Address: 1841 Rattlesnake Dr. / 200 W Broadway

City: Missoula State: MT Zip: 59802

Telephone: 406-544-9614 / (406) 258-4716 E-mail: jeffcr@cta.com / LMosiey@co.missoula.mt.us

II. PROJECT INFORMATION*

A. Project Name: Hughes-Fredline Diversion Fish Screen

River, stream, or lake: Rattlesnake Creek

Location: Township: T13N Range: R19W Section: S14

Latitude: 46.888458° Longitude: -113.970301° *within project (decimal degrees)*

County: Missoula

B. Purpose of Project:

This project is intended to prevent entrainment of salmonids on a small irrigation ditch on Rattlesnake Creek, improve upstream fish passage, allow for better control of water through the diversion, and to stabilize and revegetate the banks surrounding the diversion inlet.

C. Brief Project Description:

The Hughes-Fredline ditch is a 1.9 mile long irrigation diversion which diverts about 1.5 cfs from Rattlesnake Creek from April 1st to October 31st. This diversion is the most downstream of the six diversions on Rattlesnake Creek, located approximately 1.7 miles from the mouth and is one of the two remaining unscreened diversions in the Rattlesnake. It is known to entrain large amounts of juvenile salmonids and strands fish when water is shut off in the fall, especially because of the excellent spawning habitat in the side channel directly upstream of the ditch. In addition, when water levels are low in the summer, the existing side channel is blocked to push all water coming down the side channel into the ditch, which blocks fish travel upstream from Rattlesnake Creek into the side channel. This project involves installing a rotary-wheel fish screen on the side channel upstream of the ditch to prevent fish entrainment and establishing a year-round bypass channel around the screen to allow for upstream fish travel.

In conjunction with fish screen placement, we will replace the existing culvert at the head of the side channel and install a formal headgate so that water levels can be controlled to allow for proper screen and bypass channel functionality. This side channel inlet site in the Tom Greene Park is a heavily impacted river access point and we plan to regrade the bank and revegetate this site with native shurbs and grasses.

D. Length of stream or size of lake that will be treated: 25 ft.

E. Project Budget:

Grant Request (Dollars): $ 11,865

Contribution by Applicant (Dollars): $ 8,500 In-kind $

(salaries of government employees are not considered as matching contributions)

Contribution from other Sources (Dollars): $ In-kind $ 7,000

(attach verification - See page 2 budget template)

Total Project Cost: $ 27, 365

F. Attach itemized (line item) budget – see template

G. Attach specific project plans, detailed sketches, plan views, photographs, maps, evidence of landowner consent, evidence of public support, and/or other information necessary to evaluate the merits of the project. If project involves water leasing or water salvage complete supplemental questionnaire (fwp.mt.gov/habitat/futurefisheries/supplement2.doc).

H. Attach land management and maintenance plans that will ensure protection of the reclaimed area.

III. PROJECT BENEFITS*

A. What species of fish will benefit from this project?:

Bull trout, westslope cutthroat, rainbow trout, brook trout, brown trout, mountain whitefish have all been found in irrigation ditches throughout the Rattlesnake watershed in past surveys. This project will prevent future entrainment of these species and improve riparian habitat for these species along the mainstem of Rattlesnake Creek.

B. How will the project protect or enhance wild fish habitat?:

The lower reach of Rattlesnake Creek was once historically braided, with abundant side channels. The Hughes-Fredline ditch mimics natural salmonid rearing habitat and attracts fish, yet does not reconnect with the Rattlesnake and once it is shut off in the fall, fish are stranded. This project will help prevent the loss of salmonids down the Hughes-Fredline ditch and improve upstream fish travel into the side channel. Additionally, stabilization and revegetation of the banks surrounding the inlet to the diversion will reduce sediment inputs into Rattlesnake Creek and increase vegetative cover in the riparian corridor.

C. Will the project improve fish populations and/or fishing? To what extent?:

The fish population on Rattlesnake creek may improve due to fewer fish losses down the ditch and improved access to the side channel. A previous survey in September 2002 found roughly 60 salmonids residing in this ditch. Anecdotal evidence from local residents confirm that entrainment continues to be a problem. Rainbow x westslope cutthroat and brown trout redds are often found in the side channel, indicating its use as spawning habitat.

D. Will the project increase public fishing opportunity for wild fish and, if so, how?:

The screen will provide entrainment protection and increase spawning habitat access for salmonids, thereby having a positive impact on local fish populations which can indirectly improve fishing in the Rattlesnake watershed. The public will have access to the project site in the Tom Green Park, which is regulated by Missoula County, but will not have access to the project components on private land.

E. If the project requires maintenance, what is your time commitment to this project?:

The screen will need to be kept clear of debris to ensure proper function and the headgate and screen will need to be winterized. The current landowners agree to observe and clean the screen on a regular basis and inform the WestSlope when repairs and/or other maintenance is needed beyond their abilities. The WestSlope Chapter, and community volunteers will help ensure that newly planted vegetation in Tom Greene Park is watered and protected as it becomes established. The WestSlope Chapter is committed to ensuring the longterm success of this project.

F. What was the cause of habitat degradation in the area of this project and how will the project correct the cause?:

The main causes of habitat degradation in this area include channelization and loss of riparian habitat complexity and vegetation, which are the results of the extensive urban development in the lower Rattlesnake valley. This project will address these issues by restoring a heavily impacted river access point in Tom Greene Park via bank regarding and revegetation. While the fish screen installation does not directly address habitat degredation, it takes advantage of one of the few available opportunities to mitigate the effects of habitat degradation to improve fish populations in the Rattlesnake.

G. What public benefits will be realized from this project?:

The headgate and revegetation components of this project will be located in the Tom Green Park, a popular public recreation area in Missoula. With proper educational signage, this project can serve as a way to educate the public about the Rattlesnake fishery and associated conservation issues. Revegetation and stabilization of the river access point in Tom Greene park will improve park aesthetics and local and visiting anglers will benefit from the improved fishery.

H. Will the project interfere with water or property rights of adjacent landowners? (explain):

No.

I. Will the project result in the development of commercial recreational use on the site?: (explain):

No.

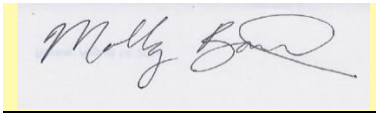
J. Is this project associated with the reclamation of past mining activity?:

No.

Each approved project sponsor must enter into a written agreement with the Department specifying terms and duration of the project.

IV. AUTHORIZING STATEMENT

I (we) hereby declare that the information and all statements to this application are true, complete, and accurate to the best of my (our) knowledge and that the project or activity complies with rules of the Future Fisheries Improvement Program.

Applicant Signature:  Date: 5/29/2015

Sponsor (if applicable):

***Highlighted boxes will automatically expand.**

Mail To: **Montana Fish, Wildlife & Parks**
Habitat Protection Bureau
PO Box 200701
Helena, MT 59620-0701

E-mail To: **Michelle McGree**
mmcgree@mt.gov

Incomplete or late applications will be returned to applicant.
Applications may be rejected if this form is modified.

*****Applications may be submitted at anytime, but must be received by the Future Fisheries Program office in Helena before December 1 and June 1 of each year to be considered for the subsequent funding period.*****

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

WORK ITEMS (ITEMIZE BY CATEGORY)	NUMBER OF UNITS	UNIT DESCRIPTION*	COST/UNIT	TOTAL COST	CONTRIBUTIONS			
					FUTURE FISHERIES REQUEST	IN-KIND SERVICES	IN-KIND CASH	TOTAL
Personnel								
Site Survey	1	LS	$1,000.00	$ 1,000.00	-		1,000.00	$ 1,000.00
Screen Design	1	LS	$2,000.00	$ 2,000.00		2,000.00		$ 2,000.00
Engineering	1	LS	$5,000.00	$ 5,000.00	-		5,000.00	$ 5,000.00
Permitting	4	hour	$25.00	$ 100.00	-		100.00	$ 100.00
Oversight	80	hour	$25.00	$ 2,000.00	-		2,000.00	$ 2,000.00
Labor	16	hour	$25.00	$ 400.00	-		400.00	$ 400.00
			Sub-Total	$ 10,500.00	$ -	$ 2,000.00	$ 8,500.00	$ 10,500.00
Travel								
Mileage				$ -				$ -
Per diem				$ -				$ -
			Sub-Total	$ -	$ -	$ -	$ -	$ -
Construction Materials								
18" corregated steel pipe	20	feet	$15.00	$ 300.00	300.00			$ 300.00
Canal headgate	1	each	$1,100.00	$ 1,100.00	1,100.00			$ 1,100.00
fabricated headwall	1	each	$2,000.00	$ 2,000.00	2,000.00			$ 2,000.00
fabricated screen cover	1	each	$2,000.00	$ 2,000.00	2,000.00			$ 2,000.00
structural fill delivered	2	cubic yard	$50.00	$ 100.00	100.00			$ 100.00
native grass seed mix	50	lbs	$6.00	$ 300.00	300.00			$ 300.00
native shrubs	100	each	$0.85	$ 85.00	85.00			$ 85.00
native tree container stock	20	each	$6.50	$ 130.00	130.00			$ 130.00
temporary fencing	1	LS	$150.00	$ 150.00	150.00			$ 150.00
Vertical Flat Plate Modular Fish Screen	1	LS	$5,000.00	$ 5,000.00		5,000.00		$ 5,000.00
			Sub-Total	$ 11,165.00	$ 6,165.00	$ 5,000.00	$ -	$ 11,165.00
Equipment								
Screen Delivery	1	LS	$1,000.00	$ 1,000.00	1,000.00			$ 1,000.00
Excavator and Operator	24	hour	$150.00	$ 3,600.00	3,600.00			$ 3,600.00
Compactor	3	day	$50.00	$ 150.00	150.00			$ 150.00
Skid Steer	3	day	$150.00	$ 450.00	450.00			$ 450.00
				$ -				$ -

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

				$ -				$ -
			Sub-Total	$ 5,200.00	$ 5,200.00	$ -	$ -	$ 5,200.00
Mobilization								
Mobilization	1	LS	$500.00	$ 500.00	500.00			$ 500.00
				$ -				$ -
				$ -				$ -
				$ -				$ -
			Sub-Total	$ 500.00	$ 500.00	$ -	$ -	$ 500.00
			TOTALS	$ 27,365.00	$ 11,865.00	$ 7,000.00	$ 8,500.00	$ 27,365.00

*Units = feet, hours, inches, lump sum, etc.

MATCHING CONTRIBUTIONS

CONTRIBUTOR	IN-KIND SERVICE	IN-KIND CASH	TOTAL	Verified? (Y/N)
WestSlope Chapter Trout Unlimited	$ -	$ 8,500.00	$ 8,500.00	Y
Yakima Fish Screen Construction Shop	$ 7,000.00	$ -	$ 7,000.00	Y
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	

Montana Fish, Wildlife & Parks

3201 Spurgin Road
Missoula, MT 59804
Phone 406-542-5506
E-mail lknotek@mt.gov
Fax 406-542-5529

Memorandum

May 28, 2015

TO: Future Fisheries Review Panel

FROM: Ladd Knotek, Fisheries Biologist

RE: Hughes-Fredline Fish Screen Project on Rattlesnake Creek

Panel Members:

This memo is written in support of the Future Fisheries Improvement Program application for a fish screen on the Hughes-Fredline diversion off of Rattlesnake Creek in Missoula. The project application was submitted by Molly Barth and Trout Unlimited, who are facilitating the project. We have sampled this ditch numerous times and found high densities of trout, including westslope cutthroat trout, rainbow x cutthroat trout hybrids, brown trout, and occasionally bull trout.

Rattlesnake Creek is an extremely important spawning tributary for the middle Clark Fork River. The stream supports viable fluvial bull trout and westslope cutthroat trout populations (upper reaches), as well as abundant migratory rainbow x cutthroat, brown trout and mountain whitefish populations in lower sections. Rattlesnake Creek provides a significant proportion of the trout recruitment to the Clark Fork River through Missoula. This stream is also unique in that >90% of the watershed lies on protected USFS Wilderness and National Recreation Area lands, while the lower main stem flows for 4.5 miles within the Missoula city limits.

The proposed project would complement recent restoration and enhancement efforts completed in the past 15 years on Rattlesnake Creek. Past projects (and funded Future Fisheries applications) have included several other fish screens on adjacent ditches in the lower watershed. This project is proposed on a ditch that has been prioritized for screening for some time. It will complement prior fish screen installations, as well as major fish passage and riparian protection efforts in this drainage.

I encourage you to strongly consider this application and please contact me if you would like more information.

Future Fisheries Improvement Program
Attn: Michelle McGree
Montana Fish, Wildlife & Parks
P.O. Box 200701
1420 E. Sixth Ave.
Helena, MT 59620-0701

May 21, 2015

Dear Panel Members,

Please accept this letter of support for the installation of a fish screen on the Hughes-Fredline diversion as a part of the Hughes-Fredline Fish Screen Project application for the Future Fisheries Improvement Program. As the landowners who's land this fish screen will be placed on, we are committed to working with Trout Unlimited and Montana Fish, Wildlife and Parks on this project and agree to allow access to the site throughout the fish screen installation process.

This project will help improve our local fishery in Rattlesnake Creek. We look forward to working with Trout Unlimited and the Department to make this project a success.

Sincerely,

Jeffrey Crouch and Jennifer Boyer
Landowner

MISSOULA COUNTY

BOARD OF COUNTY COMMISSIONERS
MAILING ADDRESS: 200 WEST BROADWAY
PHYSICAL ADDRESS: 199 WEST PINE
MISSOULA, MT 59802-4292

PHONE: (406) 258-4877
~~FAX: (406) 721-4043~~
FAX: (406) 258-3943

BCC 2015-063
May 26, 2015

Montana Fish, Wildlife & Parks
Fisheries Division
1420 E. Sixth Ave.
P.O. Box 200701
Helena, MT 59620-0701

Future Fisheries Review Panel:

The Missoula Board of County Commissioners expresses our support for the proposed improvements to the side channel inlet and creek access point in Tom Greene Park. These enhancements are a part of the Hughes-Fredline Diversion Fish Screen Project for the Future Fisheries Improvement Program.

The project components that would take place on Missoula County land in Tom Greene Park are important because they will improve public safety and restore riparian habitat along Rattlesnake Creek. The existing inlet has no formal head gate and therefore there is no way to control the amount of water entering the side channel. Installing a head gate at the initial point of diversion will allow for proper functioning of the proposed fish screen to be installed downstream on the side channel. The new head gate will also eliminate the existing culvert in the creek that is a public safety concern. The proposed bank stabilization and revegetation of the creek access point will add to the aesthetics of the Tom Greene Park, decrease sediment additions, attenuate flood waters, and provide park visitors with a sustainable access point to the creek.

To support this restoration project, the Board agrees to work with Trout Unlimited and Montana Fish, Wildlife and Parks to provide construction access. We are committed to assist in the implementation as needed to make this project a success. Thank you for the opportunity to express our support for this project. Please contact Lisa Moisey, our Parks and Trails Program Manager (406-258-4716, lmoisey@co.missoula.mt.us), if you have any questions.

Best regards,
BOARD OF COUNTY COMMISSIONERS
MISSOULA COUNTY, MONTANA

Bill Carey, Chair

Nicole Rowley, Commissioner

Jean Curtiss, Commissioner

BCC/ppr
cc: Lisa Moisey, Parks & Trails Program Manager

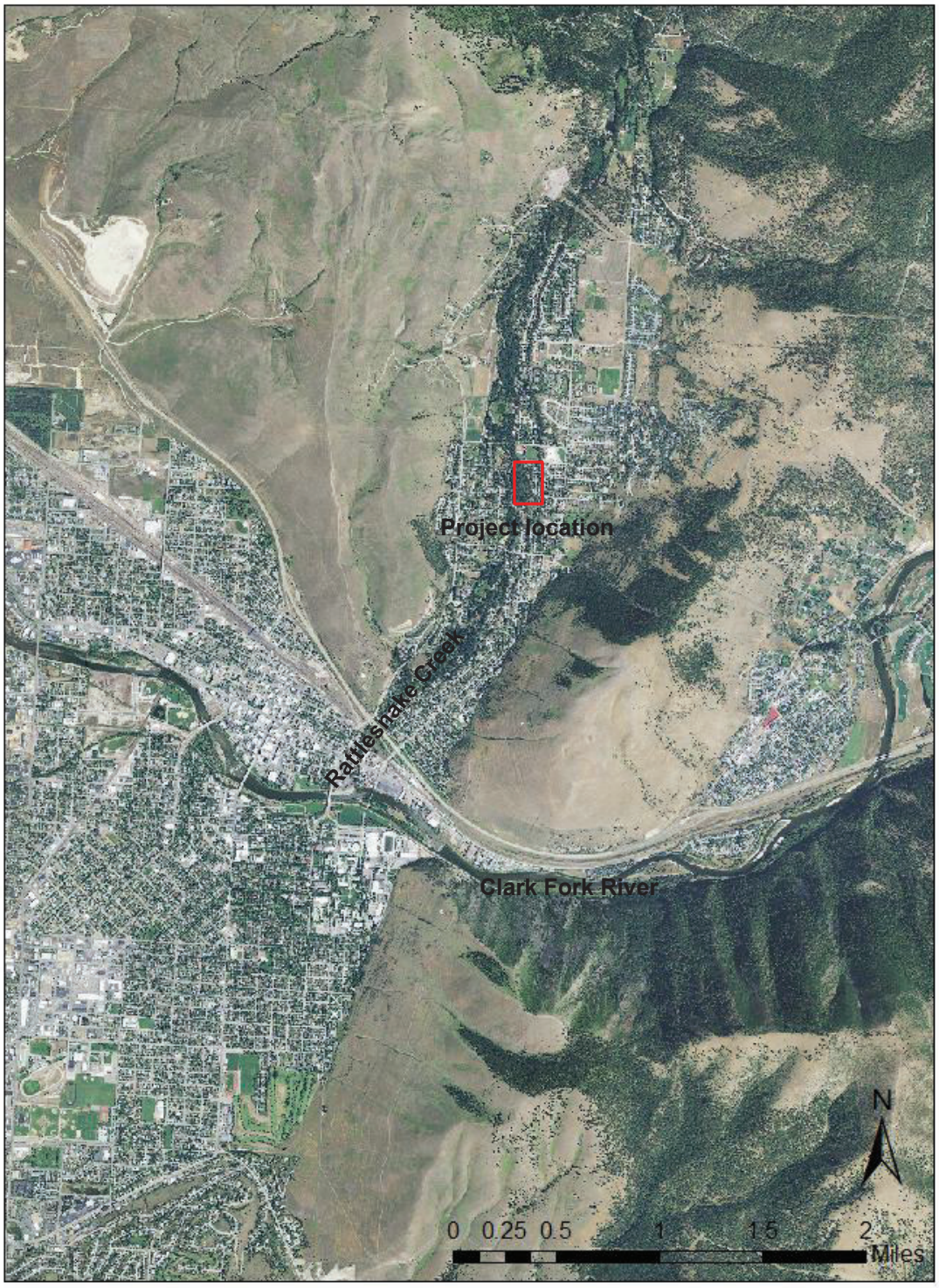


Figure 1. Vicinity map showing the location of the Hughes-Fredline Diversion Fish Screen project site within the Rattlesnake Valley, Missoula, MT.

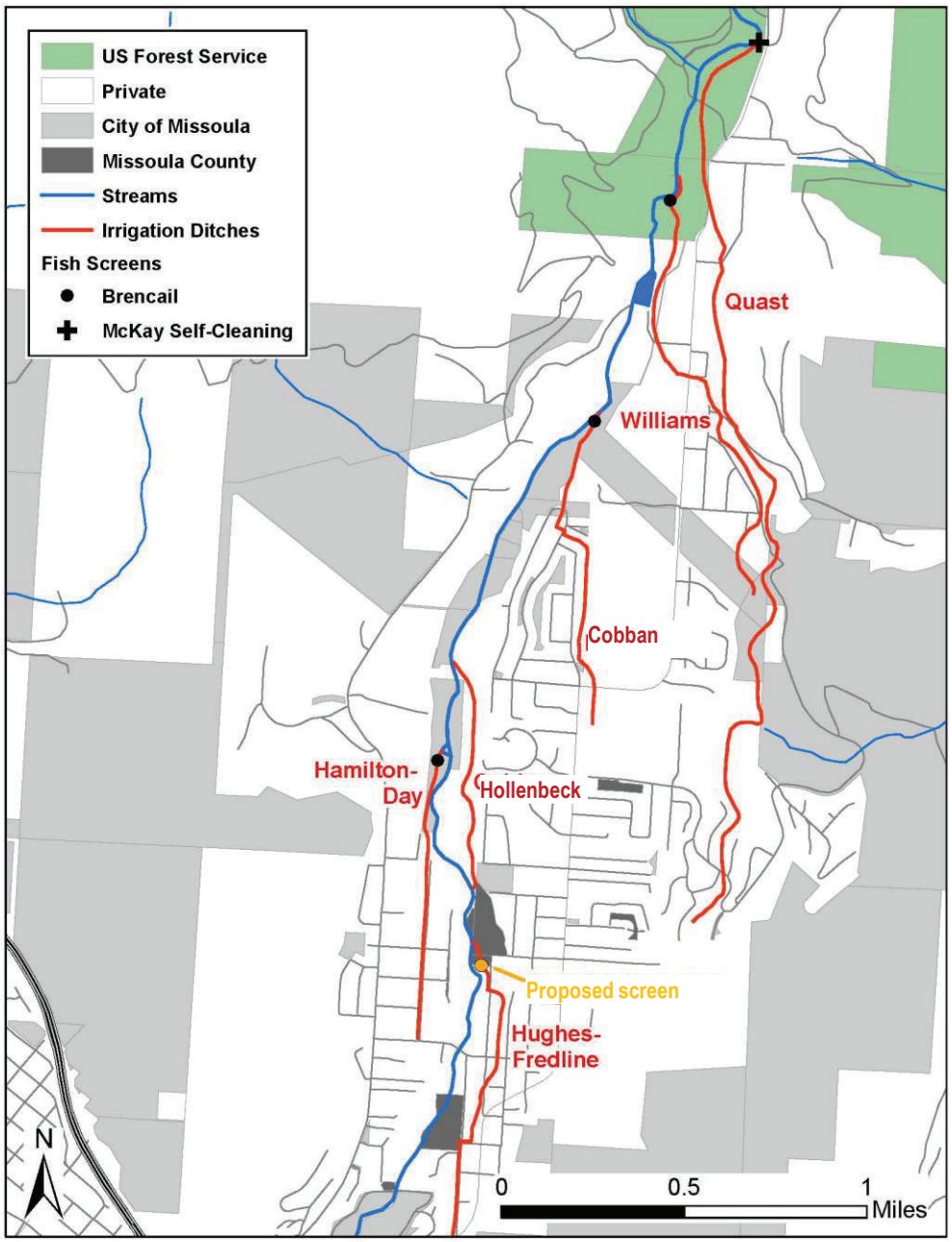


Figure 2. Rattlesnake Creek irrigation diversion network and existing fish screens.

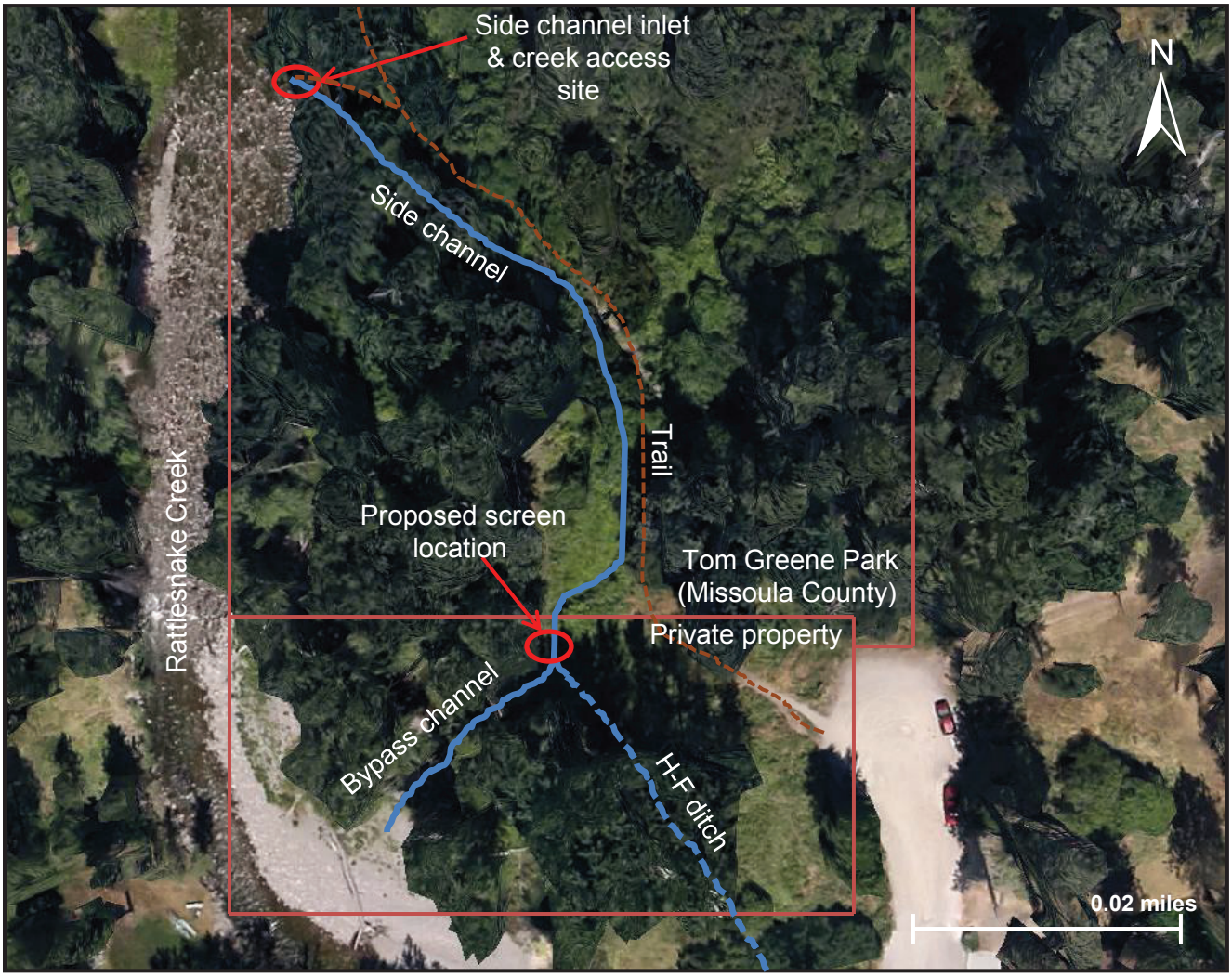


Figure 3. Project plan view map.

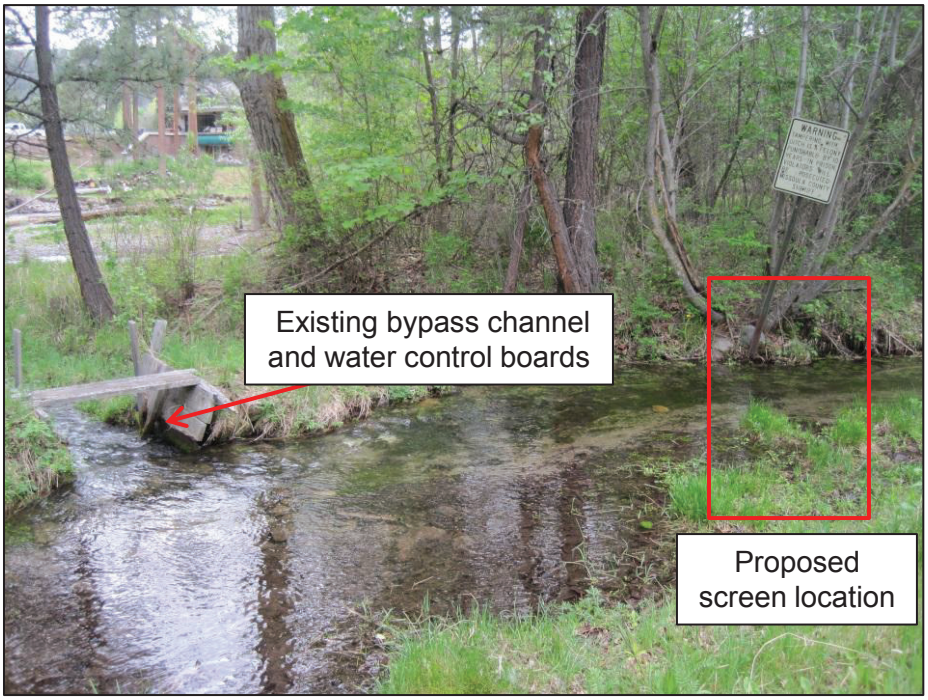


Figure 4. Screen will be placed on the existing side channel before water enters the ditch. Bypass water will travel from the screen down the bypass channel; additional bypass water will travel around the screen (water right) to allow for upstream fish access. Instead of using boards on the existing bypass channel to control water levels down the ditch, water will be instead controlled from a headgate at the inlet.

Figure 5. Screened water will travel down the Hughes-Fredline ditch.

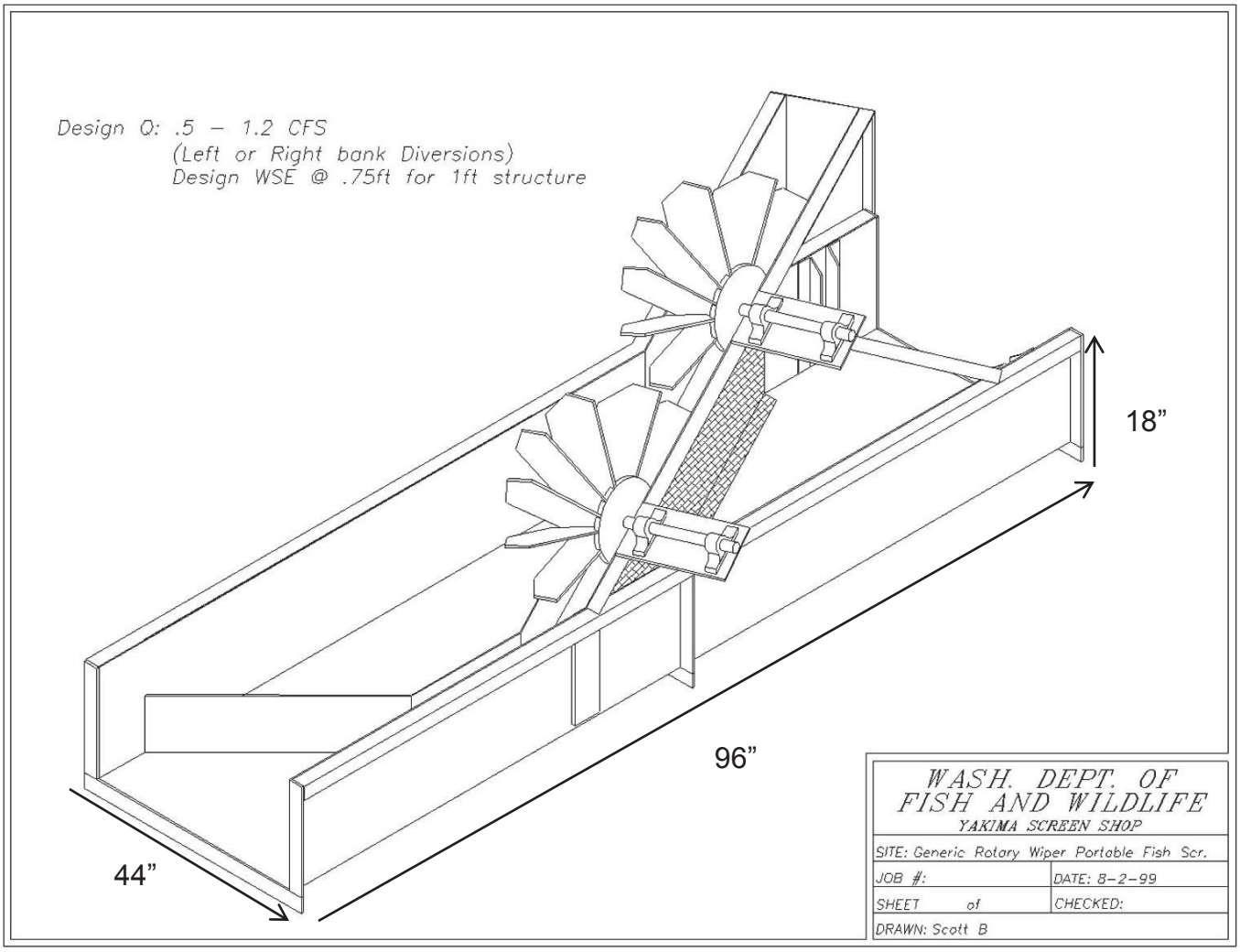


Figure 6. Design drawing of rotary wheel screen to be installed.

Figure 7. Existing side channel inlet. The culvert is under the water surface and partially smashed. Bank is unstable and eroding. Culvert will be replaced with a new 18" corrugated pipe and a steel headgate will be installed to control water flow down the side channel and ditch. Bank will be stabilized and revegetated. Temporary fencing may be used to protect new vegetation from browse and tramping by dogs and people.

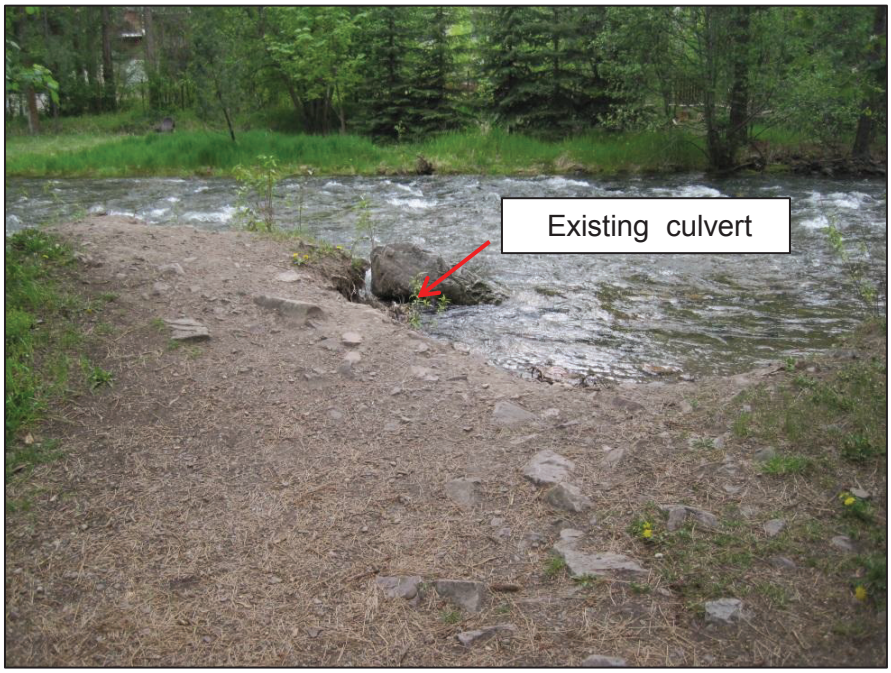


Figure 8. Current condition of the creek access point at the side channel inlet.

Figure 9. Current condition of the creek access point at the side channel inlet. We propose to regrade this bank to a more natural slope and revegetate with native trees, shurbs, and grasses. Temporary fencing may be used to protect new vegetation from browse and tramping by dogs and people.

Land management and maintenance plants to ensure protection of reclaimed area:

- The fish screen will be protected by a fabricated cover to ensure that people to do not tamper with the rotary wheels. The landowner will ensure that the fish screen is properly cleaned and contact the WestSlope Chapter should the screen need additional maintenance. The landowner has plans to move the existing public trail on his property to the east on to Missoula County lands in Fall 2015. The relocation of this trail with further discourage people to visit the fish screen.

- Newly planted vegetation and the re-graded bank in Tom Greene Park will be temporarily fenced off to prevent trampling of plants; a designated path through the site will stay open to allow creek access for park visitors while the area is fenced.

- Trout Unlimited's Big Sky Watershed AmeriCorps member will help care for newly planted vegetation and coordinate volunteer efforts to ensure that plants remain watered while they are establishing. Water jugs will be left on site to encourage people to help water. Educational signage at the trailhead may be used to inform visitors of the projects and ask them to keep dogs under control.